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Numerical modelling of two-phase flows in discrete fracture-matrix models

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The state-of-art numerical models for detailed resolution of fracture-matrix flows are the discrete fracture-matrix models (DFM). The DFM models explicitly represent the fracture network as lower-dimensional objects embedded in the matrix grid, and the flow is considered to occur both in the fracture network and in the surrounding rock matrix. Numerical simulation of DFM models is typically faster than a detailed flow simulation, where the fracture is discretized in transversal direction. One of the challenges with DFM models is how to properly account for fracture-matrix interaction.



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